ADVISORY OPINION OF
THE STATE BOARD OF LICENSURE FOR
PROFESSIONAL ENGINEERS AND LAND SURVEYORS

The State Board of Licensure for Professional Engineers and Land Surveyors met at a special called meeting on August 28, 2006. The meeting addressed the recent Alabama Supreme Court opinion in *Board of Water and Sewer Commissioners of the City of Mobile v. Hunter,* 2006 WL 208 9914 (Ala.). In an effort to give guidance to the Courts of Alabama, the Office of the Attorney General, the Alabama Department of Public Safety, the State Fire Marshal's Office, and attorneys handling cases in the state of Alabama, the Board issues the following advisory opinion:

The practice of engineering is defined by the Alabama Legislature in section 34-11-1(7) of the Code of Alabama in part as follows:

> (7) PRACTICE OF ENGINEERING. Any professional service or creative work, the adequate performance of which requires engineering education, training, and experience . . . to such services or creative work as . . . testimony . . . which embraces such services or work, either public or private, in connection with any utilities, structures, buildings, machines, equipment, processes, work systems, projects, and industrial or consumer products; equipment of a control, communication, computer, mechanical, electrical, hydraulic, pneumatic, or thermal nature, insofar as they involve safeguarding life, health, or property; and including other professional services necessary to the planning, progress, and completion of any engineering services.

ALA. CODE § 34-11-1(7) (2002). The Alabama Supreme Court was clear and unanimous in its opinion in the *Hunter* case that the above definition is constitutional and enforceable. Clearly, the practice of engineering, as it is defined in Alabama, includes the act of testimony in connection with related engineering functions.

The term "testimony" is defined under regulation 330-x-2-.01(19) as follows:

> (19) The term "testimony" as used in Sections 34-11-1(7) and 34-11-1(8), Code of Alabama 1975, shall mean a declaration made by a witness under oath or affirmation related to engineering and surveying activities in the State of Alabama.

Admin. Reg. No. 330-x-2-.01(19) (2005). Therefore, engineering testimony, when offered inside the State of Alabama, whether general or specific, whether it is given or taken inside or outside of the State of Alabama, that is related to engineering activities as defined herein, within the State of

Alabama, shall be performed by a licensed engineer, and shall be a violation of the statute when not in compliance with Section 34-11-1(7) of the Code of Alabama.

It should be noted, however, that certain areas are exempt under the law. Section 34-11-14 of the Code of Alabama states:

> This chapter shall not be construed to prevent or to affect any of the following:
> (1) The practice of any other legally recognized profession or trade.
> (2) The work of an engineer intern or land surveyor intern, employee, or a subordinate of any person holding a certificate of licensure under this chapter, or any employee of a person practicing lawfully under paragraph b of subdivision (1) of Section 34-11-4, if the work is done under the responsibility and supervision of a person holding a certificate of licensure under this chapter or a person practicing lawfully under paragraph b of subdivision (1) of Section 34-11-4.
> (3) The practice of officers and employees of the government of the United States while engaged within this state in the practice of engineering or land surveying for the government. This exception does not extend to any engineer or land surveyor engaged in the practice of professional engineering or land surveying whose compensation is based in whole or in part on a fee.
> (4) The practice of engineering or land surveying with respect to transportation or utility facilities by any transportation company or public utility subject to regulation by the Alabama Public Service Commission, the Federal Aviation Administration, the Federal Communications Commission, the Federal Energy Regulatory Commission, or the Nuclear Regulatory Commission, including its parents, affiliates, or subsidiaries; or by the officers and employees of any transportation company or public utility including its parents, affiliates, or subsidiaries. This exception shall not extend to any engineer or land surveyor engaged in the practice of engineering or land surveying whose compensation is based in whole or in part on a fee.
> (5) The practice of engineering or land surveying by any person who is employed by the Alabama Department of Transportation prior to January 1, 1997, in any engineering or engineering assistant classification series under the State of Alabama Personnel Board, merit system.
> (6) The mere execution as a contractor of work designed by a professional engineer or the supervision of the construction of such

work as a foreman or superintendent.
(7) The performance of engineering services which are purely incidental to the practice of architecture by registered architects, or their employees, or subordinates under their responsible supervising control.
(8) The performance of engineering services which are purely incidental to the practice of geology by registered geologists, their employees, or subordinates under their responsible charge.

ALA. CODE § 34-11-14 (2002). Nothing in this opinion should be read to require licensure of individuals in the categories deemed as exempt from licensure or individuals offered in opposition to those deemed exempt from licensure prior to testifying, provided that their testimony complies with the exemption and provided that the proposed expert is not claiming to base his or her opinion on engineering education and engineering experience. Furthermore, the Board was asked in October 2005 whether a professional engineer's license was required for a mechanical design engineer who will be working for one of the automotive industries located in Alabama. The opinion of the Board was that an unlicensed individual can offer engineering to or for his employer regarding an engineered product but cannot offer engineering to the public without first being licensed. Nothing in this advisory opinion should be interpreted as altering this earlier opinion.

The following definitions, reached through the combined efforts of the Board, its Counsel and members of both the plaintiff and defense bars in Alabama, are given to add some clarity to activities that have specifically been identified as areas that could potentially fall under the definition of the practice of engineering. These advisory definitions shall be restricted to the following and are not intended to cover subjects reaching beyond these specific topics. If further clarification is requested, the Board may amend, expand, or revisit these definitions.

ADVISORY OPINION DEFINITIONS

Automotive Design - A multi-disciplined process of applied science that includes elements of mechanical engineering, electrical engineering, safety engineering, structural engineering, etc., as applied to the design, testing, manufacture, and operation of motorized vehicles and their component parts.

Ballistics - The science dealing with the motion, behavior and dynamics of projectiles, the flight characteristics of projectiles relative to interior, exterior and terminal conditions, the study of the firing, flight, and effects of ammunition, and the matching of projectiles to weapons.

Fire Evaluation:

a. Fire Investigation - The investigation of a fire or explosion, including the examination, collection and interpretation of related evidence to determine the cause and origin of the fire or explosion, and the reaction and behavior of people to fire, and post-fire investigation, evaluation and feedback regarding cause and origin.

b. Fire Analysis - The application of scientific and engineering principles, code, and expert judgment to an understanding of the phenomena and the effects of fire. This may involve the assessment of the hazards and risks of fire and its effects; the mitigation of potential fire damage by proper design, construction, or arrangement and use of building materials; the design, installation, maintenance, and/or development of fire detection and fire suppression devices.

Human Factors - A science that focuses on how people interact with products, tools, procedures and any processes likely to be encountered in the modern world and a factor that should be considered in all engineering design. The human factors specialist assesses these interactions and attempts to improve efficiency, safety, and to reduce strain and discomfort.

Accident Evaluation

a. Vehicular Accident Investigation - A multi-disciplinary field that involves making a record of some or all of the physical evidence at an accident scene, collection and interpretation of evidence and influence of the environment on the vehicle.

b. Vehicular Accident Reconstruction - The application of the laws of physics to the vehicles and structures involved, including the driver or pedestrian's behavior, or the influences of the environment on the vehicles, designed to allow the accident reconstructionist to determine movement and placement of vehicles and pedestrians at different moments in time, using the laws of physics to determine vehicle movements, as well as to create visualizations and/or animations explaining and demonstrating those opinions.

c. **Other Accident Reconstruction** – The investigation and analysis of accidents involving mechanical, electrical, chemical, and

other products, processes and systems.

Blood Spatter Analysis - The evaluation of blood that has been dispersed as a result of force applied to a source of blood for the purpose of determining the characteristics of the nature of the forces which created them and the source and direction of the mechanism that caused the spatter.

Occupant Protection - The discipline involved in human and vehicle design and testing where the goal is to maximize the safety and protection of vehicle occupants in the event of the application of an external physical force to the vehicle.

Biomedical/Biomechanics - The mechanics of tissue, joints and human movement as well as the application of scientific laws to biological and physiological systems including injury causation.

Machine Design - An engineering science that includes various specialties of engineering such as mechanical engineering, electrical engineering, safety engineering, structural engineering, etc., as applied to the design, testing, manufacture, and operation involved in the development of any mechanical or organic device that transmits or modifies energy to perform or assist in the performance of tasks.

Crime Scene Investigation - The application of various areas of science to answer questions relating to examination and comparison of biological evidence, trace evidence, impression evidence, controlled substances, firearms and other evidence in legal investigations.

Analysis of Chemical Structures and Composition – A multidiscipline science of understanding the content of chemical structures or composition and how these structures or compositions react in different environments.

Chemical Processes and Equipment - A multi-disciplined area that includes the engineering design and development of processes and equipment for the manufacture of specific chemical related products.

Product, Systems or Process Design - An applied science that includes elements of chemical engineering, mechanical engineering, electrical engineering, safety engineering, structural engineering, etc., as applied to the manufacture, testing and applications that evolved from the idea

> generation, concept development, testing and manufacturing or implementation of a consumer or industrial product, system, process or service.

The definition of the practice of engineering as set forth above first limits what is to be considered as the practice of engineering to those areas that ". . .[require] engineering education, training, and experience. . . ." ALA. CODE § 34-11-1(7) (2002). As can be seen in the above definitions, there are areas of specialization that may be adequately performed by persons that are not educated, trained or experienced in the engineering field, or licensed to practice engineering in Alabama. Under the given definitions, the Board is of the opinion that the areas of ballistics, crime scene analysis, blood spatter analysis, vehicular accident investigation, human factors, biomedical/biomechanics and fire investigation clearly do not require engineering education, training, and experience to be adequately performed, and the Board does not identify these areas as "engineering" within the definition given by the Alabama Legislature unless the proposed expert is claiming to base his or her analysis strictly on their engineering education and engineering experience.

Additionally, the definition of the practice of engineering as set forth above further limits testimony and other acts considered to be the practice of engineering to those acts done ". . . in connection with any utilities, structures, buildings, machines, equipment, processes, work systems, projects, and industrial or consumer products. . . ." Under the given definitions, the Board is of the opinion that the areas of fire analysis, analysis of chemical structures and composition, do not necessarily require an engineering background to perform and are not usually done "in connection with any utilities, structures, buildings, machines, equipment, processes, work systems, projects, and industrial or consumer products", and the Board does not identify these areas as "engineering" within the definition given by the Alabama Legislature.

The other areas identified require engineering education, training, and experience and involve work done in connection with any utilities, structures, buildings, machines, equipment, processes, work systems, projects, or industrial or consumer products. The above statement does not, however, necessarily mean that testimony in these areas automatically constitutes the practice of engineering. For example, in the area of vehicular and other accident reconstruction, there is nothing in this definition that the Board interprets as preventing a person the Court may deem as qualified in the field of physics or any other legally recognized profession or trade from testifying, provided that he or she is not holding himself or herself out as an engineer as stated above. It is the Board's opinion that such an individual would be exempt from licensure under section 34-11-14(1) of the Code of Alabama. Furthermore, testimony that constitutes the practice of engineering is also limited by the Board's administrative definition of testimony by being applicable only to testimony related to engineering activities in the State of Alabama. This opinion, for instance, would not prevent a person who is not licensed in engineering in Alabama from testifying in Alabama about engineering work or design performed outside of Alabama, such as the design of an automobile part or other product designed outside of the State of Alabama, nor would it prevent an unlicensed individual from offering opposing testimony should the court declare the opposing expert otherwise qualified.

The Board reiterates that engineering testimony, when offered inside the State of Alabama, whether general or specific, whether it is given or taken inside or outside of the State of Alabama, that is related to engineering activities as defined herein, within the State of Alabama shall be performed by a licensed engineer, and shall be a violation of the statute when not in compliance with Section 34-11-1(7) of the Code of Alabama.

Issued this 28th day of August 2006.

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